DETAILED ACTION

Status of Application

The Examiner thanks the Applicant for their timely reply filed on 8 January 2008, in the matter of 10/518,561. A response to the remarks and amendments are herein presented under 37 CFR § 1.113.

Response to Remarks

The Examiner acknowledges Applicant's amendment to the Specification and hereby **withdraws** the objection.

The rejection under the *second paragraph* of *35 USC §112* made over the instant claim 13 is hereby **withdrawn** in view of Applicants' argument and claims 10 and 15-18 are hereby **withdrawn** in view of Applicants' amendments. The rejection of the instant claims 1-18 made under *35 USC §103* over Maksimoski et al. (USPN 4,983,383) in view of Guthauser (USPN 4,384,974) and Borovian et al. (USPN 4,607,036) is hereby **withdrawn** in view of Applicants' arguments and amendments to independent claim 1 and dependent claims 3, 5, 10, 14, 16 and 18.

The Examiner acknowledges that the amendments to the aforementioned claims have been made with support. Similarly, addition with support of claims 19 and 20 is acknowledged.

The Examiner further acknowledges the cancellation of claims 2, 15, and 17.

Claim Objections

Claims 4 and 7 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to

cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 4, fails to further limit claim 3 because those "oils" which are listed in the preceding claim 3 each empirically contain hydrogen and carbon thereby making them species of the larger genus "a hydrocarbon oil". Herein, and for the purposes of examination on the merits, the Examiner interprets the limitations of claim 4 to be the same as those set forth in claim 3.

Claim 7, as presently amended, depends from claim 2, which has been cancelled.

Claims 1, 3-14, 16, and 18-20 are presented and remain under consideration.

New Grounds for Rejection

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4, 10, 11 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites the limitation "a hydrocarbon oil" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claims 10, 11 and 16 recite limitations related to "the cations" or "wherein cations…" in each of the respective claims. Specifically, claim 10 recites the limitations "the clay of cations" and "wherein cations comprising...". Claim 16 also recites the limitation "wherein cations

comprising...". Claim 11 recites the limitation "the cations…". There are insufficient antecedent bases for these limitations in the claims.

Claim 11 further recites the alkyl groups as "optionally" comprising one or more ester and/or ether linkages. The recitation "optionally" renders the claim indefinite because it is unclear whether or not the ester and ether linkage interruptions are part of the claimed invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 3-14, 16, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Khalil et al. (USPN 4,524,787) in view of Vermeer et al. (USPN 5,641,480) and *The Handbook of Pharmaceutical Excipients*.

The instant claims 1, 10 and 20, are drawn to a hair-rinse composition which is not a water-in-oil emulsion and which has a pH of 8 or less comprising percent weights of: one or

more cationic surfactants, one or more fatty alcohols comprised of 8-22 carbon atoms, a hydrophobically modified clay and water. Claim 10 reads only on the composition of claim 1 because the remainder of the claim 10 recites product-by-process limitations, which per MPEP 2113, hold no patentable weight. Claims 3-5 further limit the composition of claim 1 to one or more fiber-modifying agents. Claim 6 further limits the fiber modifying agent specifically to urea. Claim 7 (objected to above) recites a weight percent range for the fiber modifying agent. Claim 8 recites limitations to the hydrophobically modified clay such that it has three layers and is comprised of oxygen, silicon and aluminum and/or magnesium. Claim 9 further limits the clay to a hydrophobically treated bentonite clay. Claim 11 recites a quaternary ammonium core formula wherein each of the four R-groups is independently an alkyl or benzyl group of 1-30 carbon atoms. Claim 12 recites that the composition of claim 1 further comprises a silicone compound. Claim 13 recites the composition of claim 1 as further comprising both poloxamer and poloxamine compounds. Claims 14 and 16 are directed to a method of treating hair comprising application of the composition of claim 1. Similar to claim 10, claim 16 also contains product-by-process recitations used to further limit the hydrophobically modified clay. Since the limitations carry no patentable weight, the claim is interpreted by the Examiner to read the same as claim 14. Claim 18 further limits the method of claim 14 such that the composition used for treating hair further comprises a hydrocarbon oil or urea. Claim 19 further limits the method such that the composition is applied to clean, wet hair that has been shampooed.

Khalil et al. teaches a hair-relaxer system formulation which contains the cationic surfactant polydiallyldimethyl ammonium chloride (3.10% by wt.), a C_{12}-C_{18} fatty alcohol mixture of stearyl and cetyl alcohols (9.41% by wt.), water, as well as fiber modifying agents

such as mineral oil (0.10% by wt.) and urea (e.g. imidazolidinyl urea; 0.25% by wt.). The composition also contains the modified clay hectorite at 12.24% by weight. The clay is known chemically as hydrated magnesium silicon dioxide (see Mineral Data Publishing) and industrially known as BENTONE (see Table 1 footnote). The formulation also teaches the ratio of the cationic surfactant to the fatty alcohol as being about 1:3. Claim 20 teaches a method for treating hair comprising applying the composition of the invention to the hair. Example 8 teaches that the compositions are applied and then removed with washing and rinsing. Though application to wet, shampooed hair is not expressly taught, it is well within the purview of the art that a hair-conditioning or treating composition is applied to clean wet hair.

Khalil does not teach that the composition has a pH of 8 or less, that the hydrophobically modified clay is bentonite or that it is within either the ranges of 0.01-5% or 0.01-3% by weight. Khalil also does not expressly teach poloxamer or poloxamine compounds as claimed by Applicants.

Vermeer et al. teach hair care compositions comprising 0.5-10% of a hair conditioning agent and water (claim 1). Bentonite or hydrated aluminum silicone dioxide is taught as a thickening agent (col. 31, lines 4-5). Example 104 (col. 82 and 83) teaches cetyl and stearyl fatty alcohols present at a combined 0.4%, Quartenium-14 (e.g. polyoxypropylene-9 methyldimethylammonium chloride) at 1.0%, as well as fiber modifying agents such as diazoldinyl urea at 0.2% and dimethicone at 1.0%. Citric acid is added to being the pH of the composition to approximately 5-7. Poloxamines (e.g. polyoxyethylene-polyoxypropylene ethylenediamines) of the instantly claimed core formula are taught as nonionic surfactants used in the invention (col. 22, line 50 to col. 23, line 12). "Cosurfactants," an essential component to

the invention of Vermeer, are taught as denoting non-soap surface active agents which include nonionic surfactants. Poloxamers of the instantly claimed core formula such as poloxamer -188 or poloxamer -237, while taught as additional thickening agents, are also well known the art as nonionic block copolymer surfactants (see *The Handbook of Pharmaceutical Excipients*, pg. 207). The compositions of Vermeer are taught as being able to be used in a "conventional manner" such as cleaning, conditioning and relaxing or styling the hair and are further taught as being applied to hair that has been thoroughly wetted and then rinsed out (col. 46, lines 3-9).

In view of the combined teachings of the prior art, one of ordinary skill in the pharmaceutical or cosmetic arts would have been motivated to prepare and administer, rinse-off hair conditioning compositions comprising a hydrophobically modified clay such as bentonite or one of its chemically acceptable derivatives (e.g. hectorite, montmorillonite, kaolinite, etc.) with a reasonable expectation of success since such a composition and the ingredients for the same are seen to be taught in the prior art. Such would have been obvious in the absence of evidence to the contrary since both Khalil and Vermeer teach overlapping components to their respective hair-conditioning compositions. Both references teach fatty alcohols, cationic surfactants and fiber modifying agents within the percent ranges as claimed by Applicants. Where Khalil does not expressly teach nonionic surfactants such as poloxamers or poloxamines, he does teach that various nonionic surfactants such as polyethylene oxide-polypropylene oxide condensates are used as emulsifying agents for the aqueous portion of the hair straightening formulation (col. 8, lines 22-32). Furthermore, hydrophobically modified BENTONE (e.g. hectorite), which is exemplified by Khalil, is taught by Vermeer in the form of bentonite. Aubert (USPN 3,773, 683) teaches that bentonite and hectorite are functionally equivalent bulking agents of hydrated

silicate, obtainable from montmorillonite, and differ only in the sense that bentonite possesses aluminum in its lattice structure whereas hectorite possesses magnesium. Both colloidal silicates may also be organically modified via different amine compounds to produce Bentone compounds such as Bentone-34 and Bentone-27 (col. 3, line 38 to col. 4, line 10). Several thickening agent alternatives for bentonite are taught by Vermeer (col. 31, lines 1-14) one of which being xanthan gum (Example 104) which used in a very small percentage (0.2%) would motivate an artisan of ordinary skill, in light of the prior art, to vary the amount of thickener used in the hair-conditioning formulation.

Neither of the references expressly teaches the specific percent ranges of the hydrophobically modified clay, as instantly claimed by Applicants. Since parameters with respect to the claimed invention are adjustable and interchangeable, it follows that each is a result-effective parameter that a person having ordinary skill in the art would routinely optimize in order to best achieve the desired composition best suited to optimizing the end-effect of the hair-conditioning composition. It would have been customary for an artisan of ordinary skill, for example, to adjust the amount of modified hectorite in the Examples of Khalil et al. to within the instantly claimed ranges since both Khalil and Vermeer exemplify the use of similar thickening agents with the exception that Vermeer utilizes them in amounts as low as 0.2%. Thus, absent some demonstration of unexpected results from the claimed parameters, optimization of any of these parameters would have been obvious at the time of Applicants' invention.

All claims have been rejected; no claims are allowed.

Conclusion

Due to the new grounds of rejection, this action is deemed **non-final**.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey T. Palenik whose telephone number is (571) 270-1966. The examiner can normally be reached on 7:30 am - 5:00 pm; M-F (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward can be reached on (571) 272-8373. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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